

### **REMARKS**

Claim 1 has been amended. Claims, 6, 9, and 13-17 have been canceled herein without prejudice. Claims 1-5, 7-8, 10-12, and 18-20 remain pending. No new matter has been added. Reconsideration is respectfully requested. Support for the amendment is found in the Specification (e.g. page 5, 3rd-6th paragraphs), Drawings, and original claims (e.g. claims 9, 13, and 17).

### **Drawings Objection**

The drawings were objected to for not showing the subject matter recited in claim 6. Claim 6 has been canceled. Withdrawal of the objection is respectfully requested.

### **Claim Rejections**

Claims 1-3, 5, 7-8, 18-19 were rejected under 35 U.S.C. § 102(b) as being encompassed by Hanse, et al., U.S. Patent No. 6,367,671, (“Hanse”).

Claims 4, 6, 9-17, and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hanse in view of Hammond et al., GB 1,032,291, (“Hammond”).

These rejections are respectfully traversed.

**35 U.S.C. § 102(b)**

**Claim 1**

Claim 1 is directed to an elongated stopper device for flow-control of molten metal from a vessel, containing molten metal. Claim 1 recites an anchor **fixed within the stopper body and projecting radially into said bore hole**. By this arrangement the anchor may serve to receive and fix one threaded end of a metal rod, inserted into the bore hole.

Hanse does not disclose or suggest these recited features. Hanse shows a stopper rod with a body and a bore hole. However, his stopper rod comprises means (5) for attachment of a metal rod, which means (5) **are fully integrated within the stopper body and do not project into the the bore hole** as is recited in claim 1! Thus, the corresponding attachment means along the metal rod must have a corresponding outer diameter to protrude into the means (5) and not vice versa! This is a totally different concept compared to the present invention, causing totally different proportions along the whole bore hole.

In addition to even further distinguish the claimed stopper device from the applied art, claim 1 has been further amended to recite that the recited anchor has “a sheet like shape” and “a circumferential length extending over 20° to 450° of the inner wall of said bore hole (12)”. Nowhere does Hanse disclose or suggest that its means (5) corresponds to an anchor that: projects into the bore hole; has a sheet like shape with its main surfaces running predominantly perpendicular to the longitudinal axis of the bore hole; and has a circumferential length extending over 20° to 450° of the inner wall of said bore hole (12).

Hanse does not disclose or suggest each and every element of the claimed invention arranged in the manner recited in the claims, as is required to sustain the rejection. Hence,

Applicants' claim 1 patentably distinguishes over Hanse. Therefore, it is respectfully submitted that the 35 U.S.C. § 102(b) rejection has been overcome. It follows that claims 2-5, 7-8, 10-12, and 18-20 which depend from claim 1 are likewise allowable.

**35 U.S.C. § 103(a)**

Applicants father respectfully submit that pending claims would not be obvious to one of ordinary skill in the art at the time of the invention in view of Hanse and Hammond. Hammond does not disclose or suggest all of the recited features and relationships discussed previously that are missing from Hanse.

For example, nowhere does Hammond disclose or suggest the recited **anchor** fixed within the stopper body and projecting radially into said bore hole. Further, one of ordinary skill in the art at the time of the invention would not regard the bush ring (14), ribs (2), or bosses/interrupting rings (Page 2, line 75-76) of Hammond as corresponding to the recited **anchor** or the “means (5) for attaching a metal rod” of Hanse.

Thus, the applied references do not include, disclose or suggest all of the features and relationships recited in the pending claims. The Office has not established a case of *prima facie* obviousness. Further, a person of ordinary skill in the art at the time of the invention would not regard the pending claims as being obvious in view of a combination of the applied references based on any of the following rationales: combining prior art elements according to known methods to yield predictable results; simple substitution of one known element for another to obtain predictable results; use of known techniques to improve similar devices (methods, or products) in the same way; applying known techniques to a known device (method, or product)

ready for improvement to yield predictable results; choosing from a finite number of identified, predictable solutions, each with a reasonable expectation of success; known work in one field of endeavor prompting variations of such known work for use in either the same field or a different field based on design incentives or other market forces in a case where the variations would have been predictable to one of ordinary skill in the art; some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify or to combine prior art reference teachings to arrive at the claimed invention. In conclusion, it was not known nor would it have been obvious to a person having ordinary skill in the art having full view of the cited references, to have produced the claimed features and relationships.

Withdrawal of the 35 U.S.C. § 103(a) rejections of claims 4, 10-12-17, and 20 is respectfully requested.

### **The Applicable Legal Standards**

In order to present a valid rejection based on obviousness, it is first necessary for the Office to make a *prima facie* showing of obviousness. *Prima facie* obviousness requires a showing that each of the recited features and relationships in the claims was known in the prior art. If the Office fails to establish a *prima facie* case of obviousness, the Applicant is under no obligation to submit evidence of nonobviousness. MPEP § 2142.

Even in cases where the Office has made a *prima facie* showing of obviousness, a rejection cannot be properly made unless there is a requisite showing that it would be obvious to one having ordinary skill in the art to combine the features and relationships to produce the invention as claimed. In accordance with the dictates of the United States Supreme Court in *KSR*

*Int'l. Co. v. Teleflex, Inc.*, 127 S.Ct. 1727, 82 USPQ 2d 1385 (2007) the determination as to whether there is a reason to combine features of prior art references must be evaluated through an analysis of the factors recited in *Graham v. John Deere*, 383 U.S.1, 148 USPQ 459 (1966). The factual inquiries that must be made under *Graham* include:

- (a) determining the scope and content of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art;
- (d) evaluating evidence of secondary considerations.

Thus, in accordance with the requirements of *Graham*, it is mandatory that before a claim can be rejected on the basis of obviousness, the Office is required to make a factual determination and resolve the level of ordinary skill in the pertinent art at the time that the invention was made. MPEP § 2141(2)(C). It is respectfully submitted that the Action does not meet these burdens.

### **Conclusion**

The pending claim recite features and relationships that are neither disclosed nor suggested in the applied art. Furthermore, the applied art is devoid of any apparent reason or rationale so as to produce Applicant's invention. Allowance of all of the pending claims is therefore respectfully requested. The undersigned will be happy to discuss any aspect of the Application by telephone at the Examiner's convenience.

Respectfully submitted,

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